

Metalworking Machinery: 2003

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Summary

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For general CIR information, explanation of general terms and historical note, see the appendix.

Current Industrial Reports

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U S C E N S U S B U R E A U

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Economics and Statistics Administration
U.S. CENSUS BUREAU

Table 1. Value of Shipments, Including Exports of Metalworking Machinery by Class of Product: 1999 to 2003
[Thousands of dollars]

Product code	Product description	2003	2002	2001	2000	1999
	Metalworking machinery.....	1,965,684	2,002,082	2,987,581	3,632,410	3,783,336
	Metal cutting type 1/2/.....	1,399,170	1,418,660	2,163,666	2,552,370	2,512,638
333512A1	Boring machines.....	76,577	128,329	124,763	87,200	53,822
333512A1	Drilling machines 3/.....	52,704	17,137	22,576	23,694	50,649
33351211	Gear cutting machines 3/4/.....	287,098	111,048	137,232	180,616	132,046
33351221	Grinding and polishing machines (except gear-tooth grinding, lapping, polishing, buffing machines).....	168,641	210,691	367,715	454,313	477,132
33351231	Lathes 5/.....	119,490	132,365	262,020	287,021	297,398
33351241	Milling machines 6/.....	39,332	56,125	137,778	150,503	200,495
33351271	Machining centers (multi-function numerically controlled machines).....	318,340	273,639	435,493	629,717	597,862
33351281	Station type machines 4/.....	(D)	169,896	347,948	401,772	407,136
33351291	Other metal cutting machine tools (except those designed primarily for home workshops, laboratories, etc.).....	250,090	238,295	276,354	333,204	291,742
3335126111	Remanufactured metal cutting machine tools.....	42,386	50,404	49,174	(NA)	(NA)
	Metal forming type 7/.....	566,514	583,422	823,915	1,080,040	1,270,698
33351311 pt.	Punching and shearing machines.....	103,056	105,925	155,316	203,813	219,988
33351311 pt.	Bending and forming machines.....	132,527	141,273	202,586	262,372	265,754
33351331	Presses (except forging).....	120,879	140,063	180,347	303,146	433,736
33351351 pt.	Forging machines 8/.....	(D)	(D)	(D)	(D)	(D)
33351351 pt.	Other metal forming type machines 8/.....	169,130	187,360	275,785	310,709	351,220
3335137121	Remanufactured metal forming machine tools.....	8,964	8,801	9,881	(NA)	(NA)

D Withheld to avoid disclosing data for individual companies. NA Not available. pt. Part.

1/Data for "All lathes (turning machines) valued under \$3,025 each" and "All milling machines, valued at under \$3,025 each" are included in total "Metal cutting type."

2/For 2002 and 2003, data for product codes 3335123126, "Vertical NC turning machines," and 3335123134, "All nonnumerically controlled lathes (turning machines) valued at \$3,025 each or more," are included in total "Metal cutting type."

3/For 2001 and 2002, data for part of "Drilling machines" have been combined with "Gear cutting machines" to avoid disclosing data for individual companies.

4/For 2003, data for "Station type machines" have been combined with "Gear cutting machines" to avoid disclosing data for individual companies.

5/For 2002 and 2003, product code 33351231, "Lathes" excludes the values for product codes 3335123126, "Vertical NC turning machines," 3335123131, "All lathes (turning machines) valued under \$3,025 each or more," and 3335123134, "All nonnumerically controlled lathes (turning machines) valued at \$3,025 each or more."

6/Product code 33351241, "Milling machines", excludes the value for product code 3335124101, "All Milling machines valued under \$3,025 each."

7/Data for "All punching and shearing machines valued under \$3,025 each" and "All other metal forming type machine tools valued at under \$3,025 each" are included in total "Metal forming type."

8/Data for "Forging machines" have been combined with "Other metal forming machines" to avoid disclosing data for individual companies.

Table 2. Total Shipments and Unfilled Orders: 2003 and 2002
[Quantity in units; value in thousands of dollars]

Product code	Product description	No. of cos.	2003			2002		
			Total shipments		Unfilled orders (value)	Total shipments		Unfilled orders (value)
			Quantity	Value		Quantity	Value	
	Metalworking machinery.....	(X)	113,174	1,965,684	754,819	115,573	2,002,082	768,336
	Total metal cutting type machine tools.....	(X)	62,878	1,399,170	527,337	63,907	1,418,660	491,581
	Total metal forming type machine tools.....	(X)	50,296	566,514	227,482	51,666	583,422	276,755
	Metal cutting type machine tools valued at \$3,025 each or more 1/.....	(X)	18,869	1,332,688	517,303	16,944	1,344,734	477,630
	Metal cutting type machine tools valued under \$3,025 2/3/4/.....	(X)	43,586	24,096	397	46,434	23,522	314
333512A1	Boring and drilling machines 2/7/.....	29	2,812	131,480	64,532	1,958	145,466	64,693
333512A101	All boring machines valued under \$3,025 each 2/.....	1	(D)	(D)	(X)	(X)	(X)	(X)
333512A103	Boring machines valued at \$3,025 each or more: Horizontal boring, drilling, and milling machines, including floor, table, rail mounted, and all other nonprecision boring machines (except boring lathes) 5/.....	6	(D)	(D)	(D)	(D)	(D)	(D)
333512A105	Precision and jig boring machines, including horizontal and vertical machines 5/.....	4	b/	1,231	b/	76,577	c/	49,179
333512A111	All drilling machines valued under \$3,025 each 2/.....	11	b/	1,200	a/	2,199	(D)	b/
333512A113	Drilling machines valued at \$3,025 each or more: Vertical upright drilling machines, including plain upright and heavy duty 6/.....	3	(D)	(D)	(D)	(D)	(D)	(D)
333512A117	Deep hole drilling machines 6/.....	5	c/	163	c/	36,848	c/	4,569
333512A119	Multiple spindle drilling machines: Adjustable joint and fixed center types 7/8/9/.....	4	(D)	(D)	(D)	(D)	(D)	(D)
333512A121	All other automatic multiple spindle drilling machines 7/8/9/.....	4	(D)	(D)	10,784	(D)	(D)	(D)
333512A123	All other drilling machines, n.e.c. 7/8/.....	4	218	a/	15,856	(X)	(D)	(D)
3335121100	Gear cutting machines, including gear hobbbers, shapers, teeth finishing, bevel gear generators, and all other gear cutting machines 7/10/.....	6	374	287,098	a/	212,928	a/	672
33351221	Grinding, polishing, buffing, honing, and lapping machines	59	32,386	168,641	75,004	36,193	210,691	87,465
3335122101	All grinding, polishing, buffing, honing, and lapping machines valued under \$3,025 each	15	30,154	11,117	85	33,973	11,451	27
3335122108	All grinding, polishing, buffing, honing, and lapping machines valued at \$3,025 each or more: External cylindrical grinding machines: Plain and universal, including angular wheel types 11/.....	4	(D)	(D)	5,563	(D)	(D)	6,887
3335122116	Roll, chucking, centerless, and other cylindrical grinding machines 11/.....	8	444	39,362	(D)	(D)	(D)	20,420
3335122120	Internal cylindrical grinding machines 11/.....	1	(D)	(D)	(D)	(X)	(X)	(X)
3335122122	Surface grinding machines 12/.....	8	(D)	(D)	(D)	(D)	(D)	(D)
3335122136	All other disc grinders, including bench, floor, snag, double spindle grinders, and abrasive belt grinders 12/.....	3	a/	387	a/	10,521	2,384	b/
3335122142	Tool, cutter, and drill point grinding machines 11/.....	11	192	30,431	(D)	170	36,132	(D)
3335122151	All other grinding machines, n.e.c., including planer type, and thread grinding machines 11/.....	12	a/	479	37,488	40,880	772	a/
3335122156	Honing and lapping machines (except flat surface lapping machines), internal, including combination bore, hone, and external 13/14/.....	5	(D)	(D)	(D)	(D)	(D)	(D)
3335122161	Flat surface lapping machines (except gear lapping) 13/14/.....	4	558	30,252	(D)	a/	690	a/
3335122166	Polishing and buffing machines, including speed lathes and multistation type 14/.....	9	172	9,470	c/	26,092	234	a/
33351231	Lathes 1/3/.....	(X)	1,816	119,490	22,020	1,793	132,365	14,246
3335123101	Numerically controlled: Horizontal.....	5	1,816	119,490	22,020	1,793	132,365	14,246
3335123107	Multiple spindle NC turning machines 15/.....	1	(D)	(D)	(D)	(D)	(D)	(D)
3335123116	Single spindle NC turning machines: Chuck sizes less than 10 inches	5	1,234	67,034	11,423	1,184	79,097	10,366
3335123121	Chuck sizes from 10 inches but less than 15 inches 15/.....	5	(D)	(D)	(D)	(D)	(D)	(D)
3335123121	Chuck sizes 15 inches and over 15/.....	2	582	52,456	10,597	609	53,268	3,880

Continued

Table 2. Total Shipments and Unfilled Orders: 2003 and 2002
[Quantity in units; value in thousands of dollars]

Product code	Product description	No. of cos.	2003				2002			
			Total shipments		Unfilled orders (value)		Total shipments		Unfilled orders (value)	
			Quantity	Value			Quantity	Value		
3335123126	Vertical NC turning machines 1/.....	4	(D)	(D)	(D)		(D)	(D)	(D)	
3335123131	All lathes (turning machines) valued under \$3,025 each 3/.....	2	(D)	(D)	(D)		(D)	(D)	(X)	
3335123134	All nonnumerically controlled lathes (turning machines) valued at \$3,025 each or more 1/.....	6	(D)	(D)	(D)		(D)	(D)	(D)	
33351241	Milling machines 4/.....	13	531	39,332	7,042		369	56,125	21,465	
3335124101	All milling machines valued under \$3,025 each 4/.....	2	(D)	(D)	(X)		(D)	(D)	(X)	
3335124106	All milling machines valued at \$3,025 or more: General-purpose, knee milling machines, all types 16/.....	2	(D)	(D)	(D)		(D)	(D)	(X)	
3335124111	Automatic: Single spindle, multiple spindle and special-purpose machines 16/.....	3	(D)	(D)	(D)		(D)	(D)	(D)	
3335124121	All other milling machines, n.e.c., including planer type and thread milling machines 16/.....	7	a/ 531	c/ 39,332	c/ 7,042	a/ 369	a/ 56,125	21,465		
33351271	Machining centers.....	13	5,841	318,340	72,746	5,367	273,639	63,146		
3335127101	Drill, mill, and bore, vertical (automatic tool change): Y-axis travel less than 20 inches 17/.....	5	(D)	(D)	(D)	(D)	(D)	8,054		
3335127106	Y-axis travel 20 inches through 26 inches 17/.....	6	4,275	205,126	33,655	3,908	174,343	15,041		
3335127111	Y-axis travel over 26 inches Drill, mill, and bore, horizontal (automatic tool change): Under 500mm pallet and smaller 18/19/.....	5	390	39,905	5,642	327	38,387	5,154		
3335127112	500 to 800mm pallet and smaller 18/19/.....	4	(D)	(D)	(D)	(D)	(D)	(D)	(D)	
3335127113	Over 800mm pallet 18/19/.....	3	(D)	(D)	(D)	(D)	(D)	(D)	(D)	
3335127114	All other machining centers, including special machining, special adapting of standard machining and machining centers with indexing turret 19/.....	2	138	42,537	(D)	158	43,175	16,251		
3335127146	Other metal cutting machine tools, n.e.c., valued under \$3,025 2/.....	4	1,038	a/ 30,772	b/ 33,449	974	17,734	18,646		
33351281	Station type machines 1/10/.....	7	(D)	(D)	(D)	66	169,896	4,198		
3335128101	Dial or rotary, trunnion, and center column 1/10/20/.....	4	(D)	(D)	(D)	(D)	(D)	(D)	(D)	
3335128106	Transfer 10/20/.....	4	(D)	(D)	(D)	(D)	(D)	(D)	(D)	
3335128111	Other station type, n.e.c. 10/20/.....	2	(D)	(D)	(D)	66	169,896	b/ 4,198		
33351291	Other metal cutting machine tools 2/.....	56	16,699	250,090	45,429	15,550	238,295	38,984		
3335129101	Other metal cutting machine tools, n.e.c., valued under \$3,025 2/.....	13	c/ 10,817	c/ 9,804	(D)	b/ 10,391	c/ 9,290	(D)		
3335129106	Other metal cutting machine tools, n.e.c., valued at \$3,025 each or more: Broaching machines 21/.....	5	(D)	(D)	2,115	(D)	(D)	c/ 1,109		
3335129122	Sawing and cut-off machines: Band saws Horizontal 22/.....	8	(D)	(D)	(D)	1,372	14,698	(D)		
3335129123	Vertical 22/.....	5	a/ 2,226	b/ 28,537	c/ 1,767	840	10,828	3,204		
3335129126	All other sawing and cutoff machines Spark erosion, ultrasonic, and electrolytic machines, all types 21/.....	12	424	15,930	1,467	420	20,030	a/ 2,961		
3335129131	Miscellaneous metal cutting machine tools 21/.....	5	454	32,651	(D)	546	37,935	4,279		
3335129136	Remanufactured metal cutting machine tools Metal forming type machine tools valued at \$3,025 or more.....	24	2,778	163,168	40,080	b/ 1,981	145,514	c/ 27,431		
3335126111	Metal forming type machine tools valued under \$3,025 23/.....	20	423	a/ 42,386	a/ 9,637	529	50,404	13,637		
33351311	Punching, shearing, bending, and forming machines 23/.....	60	7,993	235,583	120,439	9,964	247,198	117,001		
3335131101	All punching and shearing machines valued under \$3,025 each 23/.....	8	(D)	(D)	(D)	b/ 1,261	b/ 1,808	b/ 81		
3335131106	All punching and shearing machines valued at \$3,025 each or more: Power operated only: Punches, including combination punching and shearing machines Punching machines fixed position and two axes positioning table 24/.....	14	b/ 2,205	a/ 29,778	1,071	b/ 2,821	b/ 24,895	2,451		
3335131111	Plate shearing machines: Mechanical 25/.....	4	(D)	(D)	(D)	(D)	(D)	(D)		
3335131116	Hydraulic 25/.....	5	(D)	(D)	874	a/ 53	4,313	913		
3335131121	Other power operated punching and shearing machines 24/.....	7	759	13,924	1,617	a/ 648	10,811	1,355		
3335131126		6	940	59,354	10,857	824	64,098	9,581		

Continued

Table 2. Total Shipments and Unfilled Orders: 2003 and 2002
[Quantity in units; value in thousands of dollars]

Product code	Product description	No. of cos.	2003		Unfilled orders (value)	2002		Unfilled orders (value)
			Quantity	Value		Quantity	Value	
3335131131	All bending and forming machines, power operated valued at under \$3,025 each	7	1,435	2,237	216	1,526	2,190	197
3335131136	All bending and forming machines, power operated valued at \$3,025 each or more:							
3335131142	Press brakes, all types 26/.....	8	380	30,370	(D) a/	385	30,650	(D)
3335131151	Roll bending machines including sheet, plate, angles, bars, shapes and tubes 27/.....	7	(D)	(D)	(D)	(D)	(D)	(D)
3335131161	Rotary bending and forming machines, including rotary head 27/.....	8 a/	666	47,599	23,123 b/	823 a/	44,073 a/	27,253
33351331	Other bending and forming machines, including folders and slide bending machines 26/.....	19	1,608	52,321	82,681 a/	1,623	64,360	75,170
3335133101	Presses (except forging) 23/.....	32	7,053	120,879	53,897	7,682	140,063	63,138
3335133101	All presses valued under \$3,025 each 23/.....	6 a/	5,441 a/	3,130	54	6,121 a/	3,451	(D)
3335133106	All presses valued at \$3,025 each or more:							
3335133113	Mechanical presses:							
3335133121	Gap or C-frame:							
3335133128	50 tons and under 28/.....	3	(D)	(D)	(D)	(D)	(D) c/	384
3335133133	Over 50 tons 28/.....	3 c/	247 b/	3,646 c/	151	207	3,809	528
3335133136	Vertical straight sided and arch frame single action:							
3335133141	Single point 29/.....	3	(D)	(D)	(D)	(D)	(D)	(D)
3335133146	Two point:							
3335133151	150 tons and under 29/.....	1	(D)	(D)	(D)	(D)	(D)	(D)
3335133156	151 tons and over	-	(X)	(X)	(X)	(X)	(X)	(X)
3335133166	Automatic presses, strip or coil fed 29/.....	5	(D)	(D)	(D)	(D)	(D)	(D)
3335133171	All other mechanical presses 29/.....	1 c/	149 a/	45,845	17,737	277	66,026	32,916
3335133176	Hydraulic presses:							
3335133181	Vertical single action, all tonnages:							
3335133186	Housing or straight side type 30/.....	5	(D)	(D)	9,942	(D)	(D)	(D)
3335133191	Column type (open rod) 30/.....	6 b/	111 a/	25,359 a/	13,104 a/	77	30,753 b/	18,859
3335133196	Gap or C-frame:							
3335133201	15 tons and under 31/.....	6	(D)	(D)	339	180	3,903	1,196
3335133206	16 tons to 35 tons 31/32/.....	4	(D)	(D)	986	36	1,805	(D)
3335133211	Over 35 tons 31/32/.....	6 b/	342 b/	29,911	3,582	39	4,072 b/	5,946
3335133216	Other hydraulic and pneumatic presses, including horizontal	5 c/	763 b/	12,988 b/	8,002 b/	745 a/	26,244 b/	3,309
3335135176	Forging machines, including forging presses and die stamping presses 33/34/.....	4	(D)	(D)	(D)	(D)	(D)	(D)
33351351	All other metal forming type machine tools 23/.....	34	2,488	169,130	46,651	33,895	187,360	92,552
3335135101	All other metal forming type machine tools valued under \$3,025 each 23/.....	6	(D)	(D)	(D) b/	31,205 a/	28,047	(D)
3335135106	All other metal forming type machine tools valued at \$3,025 each or more:							
3335135111	Thread rolling machinery 33/34/.....	3	(D)	(D)	(D)	29	2,918	(D)
3335135116	Metal container-making machinery 33/34/.....	4	123	37,260	(D)	(D)	(D)	18,174
3335135121	Die casting machines, all types 33/34/.....	3	(D)	(D)	(D)	(D)	(D)	(D)
3335135126	Riveting machines 33/.....	9 b/	1,016 b/	24,883	(D) b/	863 a/	16,558	7,050
3335137121	All other metal forming type machine tools, n.e.c. 33/34/.....	19	1,349	106,987	46,651 b/	1,798	139,837	67,328

- Represents zero. D Withheld to avoid disclosing data for individual companies. n.e.c. Not elsewhere classified. r/Revised by 5 percent or more from previously published data. X Not applicable.

1/Product codes 3335123126 and 3335123134, and 3335128101 for "Unfilled orders (value)" for 2002, were included in "Metal cutting type machine tools valued at \$3,025 each or more," but excluded from product classes 33351231 and 33351281 respectively.

2/"Unfilled orders (value)" for product codes 333512A101, 333512A111 and 3335129101 are included in the total for "Metal cutting type machine tools valued under \$3,025," but excluded from product classes 333512A1 and 33351291.

3/Product code 3335123131 is included in the total for "Metal cutting type machine tools valued under \$3,025" but excluded from product class 33351231.

4/Product code 3335124101 is included in the total for "Metal cutting type machine tools valued under \$3,025" but excluded from product class 33351241.

5/Product codes 333512A103 and 333512A105 were combined to avoid disclosing data for individual companies.

6/Product codes 333512A113 and 333512A117 were combined to avoid disclosing data for individual companies.

7/Product codes 333512A119, 333512A121, 333512A123 and 3335121100 for 2002 were combined to avoid disclosing data for individual companies. Product codes 333512A119, 333512A121, and 333512A123 were not included with 333512A1, "Boring and drilling machines."

8/Product codes 333512A119, 333512A121, and 333512A123 for shipments for 2003 were combined to avoid disclosing data for individual companies.

9/"Unfilled orders (value)" for product codes 333512A119 and 333512A121 for 2003 were combined to avoid disclosing data for individual companies.

10/Product codes 3335121100, 3335128101, 3335128106, and 3335128111 for 2003 were combined to avoid disclosing data for individual companies.

11/Product codes 3335122108, 3335122120, and 3335122151 for shipments for 2003, and 3335122116, 3335122120, 3335122142 and 3335122151 for "Unfilled orders (value)" and product codes 3335122108, 3335122116, and 3335122151 for shipments for 2002 were combined to avoid disclosing data for individual companies.

12/Product codes 3335122122 and 3335122136 were combined to avoid disclosing data for individual companies.

13/Product codes 3335122156 and 3335122161 for shipments were combined to avoid disclosing data for individual companies.

14/"Unfilled orders (value)" for product codes 3335122156, 3335122161, and 3335122166 were combined to avoid disclosing data for individual companies.

15/Product codes 3335123101, 3335123116, and 3335123121 were combined to avoid disclosing data for individual companies.

16/Product codes 3335124106, 3335124111, and 3335124121 were combined to avoid disclosing data for individual companies.

17/Product codes 3335127101 and 3335127106 for shipments and "Unfilled orders (value)" for 2003 were combined to avoid disclosing data for individual companies.

Table 2. Total Shipments and Unfilled Orders: 2003 and 2002
[Quantity in units; value in thousands of dollars]

18/Product codes 3335127112, 3335127113, and 3335127114 in 2002 and shipments for 2003 were combined to avoid disclosing data for individual companies.
19/"Unfilled orders (value)" for product codes 3335127112, 3335127113, 3335127114, and 3335127146 in 2003 were combined to avoid disclosing data for individual companies.
20/Product codes 3335128101, 3335128106 and 3335128111 for 2002 with the exception of "Unfilled orders (value)" (see footnote 1) were combined to avoid disclosing data for individual companies.
21/Product codes 3335129106 and 3335129136 for shipments, and "Unfilled orders (value)" for 3335129131 for 2003 were combined to avoid disclosing data for individual companies.
22/Product codes 3335129122 and 3335129123 for 2003 and "Unfilled orders (value)" for 2002 were combined to avoid disclosing data for individual companies.
23/Product codes 3335131101 and 3335135101 for 2003 and "Unfilled orders (value)" for product codes 3335133101 and 3335135101 for 2002 are included in the total for "Metal forming type machine tools valued under \$3,025," but excluded from product classes 33351311, 33351331 and 33351351.
24/Product codes 3335131111 and 3335131126 were combined to avoid disclosing data for individual companies.
25/Product codes 3335131116 and 3335131121 for 2003 shipments were combined to avoid disclosing data for individual companies.
26/"Unfilled orders (value)" for product codes 3335131136 and 3335131161 were combined to avoid disclosing data for individual companies.
27/Product codes 3335131142 and 3335131151 were combined to avoid disclosing data for individual companies.
28/Product codes 3335133106 and 3335133113 for 2003 and shipments for 2002, were combined to avoid disclosing data for individual companies.
29/Product codes 3335133121, 3335133128, 3335133136 and 3335133141 were combined to avoid disclosing data for individual companies.
30/Product codes 3335133146 and 3335133151 for shipments, and "Unfilled orders (value)" for 2002 were combined to avoid disclosing data for individual companies.
31/Product codes 3335133156, 3335133161, and 3335133166 for shipments for 2003 were combined to avoid disclosing data for individual companies.
32/"Unfilled orders (value)" for product codes 3335133161 and 3335133166 for 2002 were combined to avoid disclosing data for individual companies.
33/Product codes 3335135176, 3335135106, 3335135116 and 3335135126, for 2003 and "Unfilled orders (value)" for 3335135111, 3335135121, and 3335135126 for 2003, were combined to avoid disclosing data for individual companies.
34/Product codes 3335135176, 3335135116 and 3335135126, and "Unfilled orders (value)" for 3335135106 and 333513526 for 2002 were combined to avoid disclosing data for individual companies.

Note: The percent of estimation of each item is indicated as follows: a/16 to 25 percent of this item is estimated.
b/26 to 50 percent of this item is estimated. c/Over 50 percent of this item is estimated.

Table 3. Shipments of Numerically Controlled Machines; All Export Shipments: 2003 and 2002
[Quantity in units. Value in thousands of dollars]

Product description	2003			2002		
	Shipments of numerically controlled machines		Export shipments (value) 1/	Shipments of numerically controlled machines		Export shipments (value) 1/
	Quantity	Value		Quantity	Value	
Metalworking machinery.....	11,132	1,051,607	388,141	10,417	1,055,265	351,517
Metal cutting type machine tools 2/.....	10,518	914,594	283,479	9,527	895,275	259,214
Boring and drilling machines 2/.....	(D)	(D)	(D)	(D)	(D)	(D)
Gear cutting machines 2/.....	(D)	(D)	(D)	(D)	(D)	(D)
Grinding, polishing, buffing, and lapping machines 2/.....	519	86,678	(D)	417	111,310	(D)
Valued under \$3,025 each, external cylindrical grinding machines (plain and universal), and surface grinding machines, all types 2/.....	453	83,397	(D)	343	105,435	(D)
Honing, lapping, polishing and buffing machines 2/.....	66	3,281	(D)	74	5,875	(D)
Horizontal NC turning machines, valued at \$3,025 or more 3/.....	1,816	119,490	36,717	1,793	132,365	41,381
Single spindle NC turning machines:						
Chuck sizes less than 10 inches 3/.....	1,234	67,034	(D)	1,184	79,097	(D)
Chuck sizes over 10 inches but less than 15 inches 4/.....	(D)	(D)	(D)	(D)	(D)	(D)
Chuck sizes 15 inches and over and multiple spindle 4/.....	582	52,456	13,908	609	53,268	13,804
Vertical NC turning machines, valued at \$3,025 or more 2/.....	(D)	(D)	(D)	(D)	(D)	(D)
Nonnumerically controlled turning machines, valued at \$3,025 or more 2/.....	(X)	(X)	(D)	(X)	(X)	(D)
Milling machines 2/.....	418	33,837	(D)	179	50,847	(D)
Machining centers 5/.....	5,841	318,340	74,768	5,367	273,639	70,525
Drill, mill and bore, vertical (automatic tool change) 5/.....	4,665	245,031	(D)	4,235	212,730	64,755
Y-axis travel less than 20 inches 5/6/.....	(D)	(D)	(D)	(D)	(D)	(D)
Y-axis travel 20 inches through 26 inches 5/6/.....	4,275	205,126	(D)	3,908	174,343	32,040
Y-axis travel over 26 inches 5/.....	390	39,905	(D)	327	38,387	(D)
Drill, mill and bore, horizontal (automatic tool change) 7/.....	138	42,537	9,957	158	43,175	5,770
Under 500mm pallet 7/8/.....	(D)	(D)	(D)	(D)	(D)	(D)
500mm-800mm pallet 7/8/.....	(D)	(D)	(D)	(D)	(D)	(D)
Over 800mm pallet 8/.....	138	42,537	(X)	158	43,175	(X)
All other machining centers 2/.....	1,038	30,772	(D)	974	17,734	(D)
Station type machines, and other metal cutting machine tools, n.e.c. 2/.....	854	144,343	64,025	780	162,880	58,921
Remanufactured metal cutting machines 2/.....	302	27,795	(D)	329	27,791	(D)
Metal forming type machine tools 9/.....	614	137,013	104,662	890	159,990	92,303
Punching, shearing, bending, and forming machines.....	413	65,030	35,140	474	84,320	46,359
Punching and shearing machines.....	170	40,063	11,606	220	56,893	16,733
All bending and forming machines, power operated.....	243	24,967	23,534	254	27,427	29,626
Presses (except forgings) 9/.....	(D)	(D)	11,101	199	22,314	13,306
Forging machines, and all other metal forming type machine tools 10/.....	173	64,456	58,421	217	53,356	32,638
Remanufactured metal forming machines 10/.....	(D)	(D)	(D)	(D)	(D)	(D)

D Withheld to avoid disclosing data for individual companies. n.e.c. Not elsewhere classified. X Not applicable.

1/Data includes the value of all types of machines exported, as reported by MQ333W survey panel.

2/Data were included in total "Metal cutting type machine tools" ("Station type machines" 2003 only).

3/Data were included in "Horizontal NC turning machines, valued at \$3,025 or more."

4/Data were included in "Chuck sizes 15 inches and over and multiple spindle."

5/Data for export shipments were included in "Machining centers."

6/Data for shipments of numerically controlled machines were included in "Y-axis travel 20 inches through 26 inches."

7/Data for export shipments included in "Drill, mill and bore, horizontal (automatic tool change)."

8/Data for shipments of numerically controlled machines were included in "Over 800mm pallet."

9/Data for shipments of numerically controlled machines were included in "Metal forming type machine tools."

10/Data for "Remanufactured metal forming machines" were included in "Forging machines, and all other metal forming type machine tools."

Table 4. Shipments, Exports, and Imports of Metalworking Machinery: 2003 and 2002
[Quantity in units. Value in thousands of dollars]

Product description	Manufacturers' shipments		Exports of domestic merchandise 1/ 2/		Imports for consumption 1/ 3/	
	Quantity	Value	Quantity	Value at port	Quantity	Value 4/
2003						
Boring and drilling machines, excluding multifunction NC machines, machining centers:						
Boring machines:						
Valued under \$3,025 each.....	(D)	(D)	677	487	484	138
Valued at \$3,025 each or more	1,231	76,577	281	18,114	566	40,112
Drilling machines:						
Valued under \$3,025 each	1,200	2,199	5,317	4,228	266,981	19,498
Valued at \$3,025 each or more	381	52,704	839	28,716	683	46,750
Gear cutting machines 5/.....	374	287,098	4,075	35,894	264	38,785
Grinding, polishing, buffing, honing, and lapping machinery (except gear tooth grinding, lapping, polishing, and buffing machines):						
Valued under \$3,025 each.....	30,154	11,117	72,112	14,688	746,471	28,158
Valued at \$3,025 each or more	2,232	157,524	2,287	80,602	4,827	271,873
Lathes (turning machines) under \$3,025.....	(D)	(D)	1,285	1,398	21,573	11,870
Horizontal NC turning machines.....	1,816	119,490	308	38,322	3,651	407,747
Vertical NC turning machines.....	(D)	(D)	47	7,806	316	52,270
Nonnumerically controlled turning machines.....	(D)	(D)	772	13,365	2,648	51,217
Milling machines:						
Valued under \$3,025 each.....	(D)	(D)	3,803	5,382	12,925	6,532
Valued at \$3,025 each or more.....	531	39,332	1,576	41,744	3,520	88,423
Machining centers (multifunction NC machines):						
Drill, mill, and bore, vertical (automatic tool change):						
Y-axis travel less than 20 inches and 20 inches through 26 inches.....	4,275	205,126	666	73,750	1,689	141,649
Y-axis travel 26 inches and over.....	390	39,905	15	2,080	321	57,961
Drill, mill, and bore, horizontal (automatic tool change).....	138	42,537	47	12,772	978	242,966
Other machining centers.....	1,038	30,772	477	42,422	289	82,722
Station type machines 5/.....	(D)	(D)	44	10,473	310	201,616
Other metal cutting machine tools:						
Valued under \$3,025 each.....	10,817	9,804	(NA)	(NA)	(NA)	(NA)
Valued at \$3,025 each or more.....	5,882	240,286	9,225	293,802	5,525	254,641
Punching and shearing machines:						
Valued under \$3,025 each.....	(D)	(D)	4,023	3,048	12,511	4,237
Valued at \$3,025 each or more.....	3,904	103,056	1,337	47,354	1,622	79,699
Bending and forming machines:						
Valued under \$3,025 each.....	1,435	2,237	14,341	4,889	97,797	7,087
Valued at \$3,025 each or more.....	2,654	130,290	2,294	87,305	11,235	238,960
Presses (except forging presses).....	7,053	120,879	8,054	72,112	13,117	124,953
Forging machines, including presses 6/.....	(D)	(D)	218	40,142	1,742	163,473
All other metal forming type machine tools:						
Valued under \$3,025 each.....	(D)	(D)	(NA)	(NA)	(NA)	(NA)
Machines valued at \$3,025 each or more:						
Die casting machines 6/.....	(D)	(D)	723	12,597	1,932	51,335
Thread rolling machines 6/.....	(D)	(D)	25	696	52	3,134
Other metal forming machines 6/.....	1,349	106,987	(NA)	(NA)	(NA)	(NA)
2002						
Boring and drilling machines, excluding multifunction NC machines, machining centers:						
Boring machines:						
Valued under \$3,025 each.....	(X)	(X)	5,968	905	307	250
Valued at \$3,025 each or more.....	987	124,763	180	10,420	605	62,408

Table 4. Shipments, Exports, and Imports of Metalworking Machinery: 2003 and 2002
[Quantity in units. Value in thousands of dollars]

Product description	Manufacturers' shipments		Exports of domestic merchandise 1/2/		Imports for consumption 1/3/	
	Quantity	Value	Quantity	Value at port	Quantity	Value 4/
Drilling machines:						
Valued under \$3,025 each.....	1,639	3,743	5,532	3,528	268,109	21,571
Valued at \$3,025 each or more 7/.....	177	18,833	611	22,490	999	43,716
Gear cutting machines 7/.....	646	137,232	2,360	15,619	264	32,517
Grinding, polishing, buffing, honing, and lapping machinery (except gear tooth grinding, lapping, polishing, and buffing machines):						
Valued under \$3,025 each.....	40,236	15,302	57,846	10,483	963,202	31,396
Valued at \$3,025 each or more.....	3,904	352,413	4,429	128,888	5,841	253,235
Lathes (turning machines) under \$3,025.....	(D)	(D)	903	1,280	15,700	11,419
Horizontal NC turning machines.....	2,465	203,538	291	35,844	3,010	317,005
Vertical NC turning machines.....	154	50,130	91	10,096	455	70,838
Nonnumerically controlled turning machines.....	330	8,352	653	10,363	2,926	52,001
Milling machines:						
Valued under \$3,025 each.....	(D)	(D)	3,898	5,638	9,368	6,746
Valued at \$3,025 each or more.....	1,990	137,778	2,139	57,496	3,219	95,053
Machining centers (multifunction NC machines):						
Drill, mill, and bore, vertical (automatic tool change):						
Y-axis travel less than 20 inches and 20 inches through 26 inches.....	4,755	250,618	485	56,143	1,540	120,704
Y-axis travel 26 inches and over.....	466	63,915	15	2,427	471	72,937
Drill, mill, and bore, horizontal (automatic tool change).....	257	55,665	44	12,519	980	278,195
Other machining centers.....	1,952	65,295	360	24,661	168	56,208
Station type machines.....	151	347,948	83	46,762	362	159,917
Other metal cutting machine tools:						
Valued under \$3,025 each.....	10,856	10,227	(NA)	(NA)	(NA)	(NA)
Valued at \$3,025 each or more.....	6,204	266,127	4,354	117,117	5,687	154,166
Punching and shearing machines:						
Valued under \$3,025 each.....	639	1,187	3,659	1,562	10,593	3,972
Valued at \$3,025 each or more.....	5,678	154,129	1,416	76,014	1,771	64,641
Bending and forming machines:						
Valued under \$3,025 each.....	1,631	2,283	17,772	4,293	89,690	7,483
Valued at \$3,025 each or more.....	3,359	200,303	1,855	58,083	8,068	225,699
Presses (except forging presses).....	10,059	180,347	17,153	77,079	19,458	171,588
Forging machines, including presses 6/.....	(D)	(D)	203	32,678	1,500	49,423
All other metal forming type machine tools:						
Valued under \$3,025 each.....	39,575	35,728	(NA)	(NA)	(NA)	(NA)
Machines valued at \$3,025 each or more:						
Die casting machines 6/.....	(D)	(D)	2,443	24,704	2,323	42,801
Thread rolling machines	56	9,042	57	1,308	52	4,159
Other metal forming machines 6/.....	1,983	187,239	(NA)	(NA)	(NA)	(NA)

D Withheld to avoid disclosing data for individual companies. NA Not available. X Not applicable.

1/For a comparison of North American Industry Classification System (NAICS)-based product codes, Schedule B export codes, and HTSUSA import codes, see Table 5.

2/Source: Census Bureau report EM 545, U.S. Exports.

3/Source: Census Bureau report IM 145, U.S. General Imports for Consumption.

4/Dollar value represents the c.i.f. (cost, insurance, and freight) value at first port of entry in the United States plus import duties.

5/Manufacturing shipments data for "Station type machines" for 2003 have been combined with "Gear cutting machines" to avoid disclosing data for individual companies.

6/Data included with "Other metal forming machines."

7/Manufacturing shipments data for part of "Drilling machines, valued at \$3,025 each or more" for 2002 have been combined with "Gear cutting machines" to avoid disclosing data for individual companies.

Table 5. Comparison of the North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes, and HTSUSA Import Codes: 2004

Product code	Product description	Export code 1/	Import code 2/
	Boring machines, excluding multifunction NC machines, machining centers:		
333512A101	All boring machines valued under \$3,025 each	8459.39.0020 8459.40.0020	8459.39.0020 8459.40.0020
	Machines valued at \$3,025 each or more:		
333512A103	Horizontal boring, drilling, and milling machines, including floor, table and rail mounted, and all other boring machines (except boring lathes)	8459.31.0010 8459.31.0040 8459.31.0070 8459.39.0040 8459.39.0050 8459.40.0040 8459.40.0050 8459.40.0070 8459.40.0080	8459.31.0010 8459.31.0040 8459.31.0070 8459.39.0040 8459.39.0050 8459.40.0040 8459.40.0050 8459.40.0070 8459.40.0080
333512A105	Precision and jig boring machines, including horizontal, vertical, and all other precision boring machines	8459.10.0000	8459.10.0000
	Drilling machines, excluding machining centers:		
333512A111	All drilling machines valued under \$3,025 each	8459.29.0020	8459.29.0020
	Machines valued at \$3,025 each or more:		
333512A113	Vertical, upright drilling machines, including plain upright and heavy duty	8459.29.0070	8459.29.0070
	Multiple spindle drilling machines (cluster of spindles driven from one central power unit):		
333512A119	Adjustable joint and fixed center type	8459.29.0040	8459.29.0040
333512A121	All other automatic multiple spindle drilling machines, including indexing turret head (fixed column and table)		
333512A117	Deep hole drilling machines	8459.21.0080	8459.21.0080
333512A123	All other drilling machines, n.e.c., including bench type sensitive, vertical n.e.c., and radial	8459.29.0050 8459.29.0090 8461.40.1050	8459.29.0050 8459.29.0090 8461.40.1020
3335121100	Gear cutting machines, including gear hobbers, shapers, teeth finishing, bevel gear generators, and all other gear cutting machines	8461.40.1070 8461.40.1090 8461.40.5040 8461.40.5060	8461.40.1030 8461.40.1040 8461.40.1060 8461.40.5040 8461.40.5050 8461.40.5070
	Grinding, polishing, buffing, honing, and lapping machinery (except gear tooth grinding, lapping, polishing, and buffing machines):		
3335122001	All grinding, polishing, buffing, honing, and lapping machines valued under \$3,025 each	8460.39.0020 8460.40.0020 8460.90.0020	8460.39.0020 8460.40.8020 8460.90.8020
	Machines valued at \$3,025 each or more:		
	External cylindrical grinding machines:		
3335122008	Plain and universal, including angular wheel types	8460.21.0080	8460.21.0080
3335122016	Roll, chucking, centerless, and other cylindrical grinding machines	8460.29.0010 8460.29.0030	8460.29.0010 8460.29.0030
3335122036	All other disc grinders, including bench, floor, snag, double spindle grinders, and abrasive belt grinders		
3335122051	All other grinding machines, n.e.c., including planer type, and thread grinding machines	8460.29.0050	8460.29.0050

Table 5. Comparison of the North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes, and HTSUSA Import Codes: 2004

Product code	Product description	Export code 1/	Import code 2/
3335122022	Surface grinding machines	8460.11.0080 8460.19.0010 8460.19.0050	8460.11.0080 8460.19.0010 8460.19.0050
3335122042	Tool, cutter, and drill point grinding machines, including universal and special	8460.31.0080	8460.31.0080
3335122056	Honing and lapping machines (except gear honing and lapping): Internal, including combination bore, hone, and external (except flat surface lapping machines)	8460.40.0060 8460.40.0080	8460.40.4060 8460.40.8080
3335122061	Flat surface lapping machines (except gear lapping)	8460.90.0060	8460.90.4060
3335122066	Polishing and buffing machines (including speed lathes and multistation type)	8460.90.0080	8460.90.8080
3335123031	Lathes (turning machines): All lathes valued under \$3,025 each	8458.19.0020 8458.99.5060	8458.19.0020 8458.99.5060
	Machines valued at \$3,025 each or more:		
	Horizontal spindle:		
3335123001	Multiple spindle NC turning machine	8458.11.0010	8458.11.0010
	Single spindle NC turning machine:		
3335123007	Chuck sizes less than 10"	8458.11.0050	8458.11.0050
3335123016	Chuck sizes from 10" but less than 15"	8458.11.0090	8458.11.0090
3335123021	Chuck sizes 15" and over		
3335123026	Vertical spindle	8458.91.1060 8458.91.1080 8458.91.5050 8458.91.5070	8458.91.1060 8458.91.1080 8458.91.5050 8458.91.5070
3335123034	Nonnumerically controlled turning machines valued at \$3,025 each or more	8458.19.0030 8458.19.0050 8458.19.0070 8458.19.0090 8458.99.1050 8458.99.5090	8458.19.0030 8458.19.0050 8458.19.0070 8458.19.0090 8458.99.1050 8458.99.5090
3335124001	Milling machines, excluding machining centers: All milling machines valued under \$3,025 each	8459.59.0020 8459.69.0020	8459.59.0020 8459.69.0020
3335124006	Machines valued at \$3,025 each or more: General purpose, knee milling machines all types	8459.51.0080 8459.59.0030	8459.51.0080 8459.59.0030
3335124011	Automatic and manufacturing bed type: Single spindle, multiple spindle and special purpose machines	8459.61.0080	8459.61.0080
3335124021	All other milling machines, n.e.c., including planer type and thread milling machines	8459.69.0050 8459.69.0070 8459.69.0090	8459.69.0050 8459.69.0070 8459.69.0090
3335127001	Machining centers (multifunctions NC machines): Drill, mill, and bore, vertical (automatic tool change): Y-axis travel less than 20"	8457.10.0015	8457.10.0015
3335127006	Y-axis travel 20" through 26"		
3335127011	Y-axis travel over 26"	8457.10.0025	8457.10.0025

Table 5. Comparison of the North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes, and HTSUSA Import Codes: 2004

Product code	Product description	Export code 1/	Import code 2/
	Machining centers (multifunctions NC machines) - Cont.:		
	Drill, mill, and bore, horizontal (automatic tool change):		
3335127012	Under 500mm pallet	8457.10.0035	8457.10.0055
3335127013	500mm-800mm pallet		8457.10.0060
3335127014	Over 800mm pallet		8457.10.0065
			8457.10.0070
3335127046	All other machining centers, including special machining centers, special adapting of standard machining centers, and machining centers with indexing turret Station type machines:	8457.10.0045	8457.10.0075
3335128001	Dial or rotary, trunnion, and center column	8457.20.0010	8457.20.0010
3335128006	Transfer (free, palletized shuttle)	8457.20.0090	8457.20.0090
3335128011	Other station type, n.e.c.	8457.30.0010	8457.30.0010
		8457.30.0090	8457.30.0090
	Other metal cutting machine tools:		
		8459.70.0060	8459.70.8060
3335129001	Other metal cutting machine tools, n.e.c., valued under \$3,025	8461.20.0070	8461.20.8070
		8461.30.0040	8461.30.8040
		8461.50.0020	8461.50.8020
		8461.90.6020	8461.90.6020
		8461.90.6050	8461.90.6050
	Machines valued at \$3,025 each or more:		
3335129006	Broaching machines, including internal surface and all other broaching machines	8461.30.0060	8461.30.4060
		8461.30.0080	8461.30.8080
	Sawing and cutoff machines:		
3335129022	Band saws - vertical	8461.50.0050	8461.50.4050
3335129023	Band saws - horizontal	8461.50.0090	8461.50.8090
3335129026	All other sawing and cutoff machines		
	Spark erosion, ultrasonic and electrolytic machines all types	8456.20.0000	8456.20.1010
3335129031		8456.30.0000	8456.20.1050
		8456.99.3005	8456.30.1020
		8456.99.3040	8456.30.1050
		8456.99.3060	8456.30.1070
		8456.99.3080	8456.99.3005
			8456.99.3040
			8456.99.3060
			8456.99.3080
3335129036	Miscellaneous metal cutting machine tools, including rifling, centering, keyseating, pointing, chemfering, facing, shaving, grooving, countersinking, burring, reaming, screw and nut slotting machines, threading planers, and shapers	8456.10.0000	8456.10.1010
		8459.70.0020	8456.10.1020
		8459.70.0080	8459.70.4000
		8461.20.0010	8459.70.8080
		8461.20.0090	8461.20.4000
		8461.90.3040	8461.20.8090
		8461.90.3080	8461.90.3040
		8461.90.6030	8461.90.3080
		8461.90.6090	8461.90.6030
			8461.90.6090

Table 5. Comparison of the North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes, and HTSUSA Import Codes: 2004

Product code	Product description	Export code 1/	Import code 2/
	Punching and shearing machines:		
3335131001	All punching and shearing machines valued under \$3,025 each	8462.39.0020	8462.39.0020
	Machines valued at \$3,025 or more:	8462.49.0020	8462.49.0020
	Power operated only:		
	Plate shearing machines (squaring, slitting, etc.):		
3335131016	Mechanical		
3335131021	Hydraulic	8462.31.0080	8462.31.0080
3335131006	Punches, including combination punching and shearing machines	8462.39.0050	8462.39.0050
		8462.41.0080	8462.41.0080
3335131011	Punching machines fixed position and two axes positioning table		
		8462.49.0050	8462.49.0050
3335131026	Other power operated punching & shearing machines		
	Bending and forming machines:		
3335131031	All bending and forming machines valued under \$3,025	8462.29.0020	8462.29.8025
	Machines valued at \$3,025 each or more:		
3335131036	Press brakes all types	8462.21.0080	8462.21.4085
3335131042	Roll bending machines, including sheet, plate, angles, bars, shapes, and tubes	8462.29.0030	8462.21.8085
		8462.29.0040	8462.29.4085
3335131051	Rotary bending and forming machines, including rotary head	8462.29.0050	8462.29.8035
			8462.29.8045
3335131061	Other bending and forming machines, including folders		8462.29.8055
	Presses except forging presses:		
3335133001	All presses valued under \$3,025 each	8462.99.0020	8462.99.8020
	Machines valued at \$3,025 each or more:		
	Mechanical		
	Open back inclinable (gap type):		
3335133006	50 tons and under	8462.99.0030	8462.99.4030
3335133013	Over 50 tons	8462.99.0040	8462.99.8045
	Vertical straight sided and arch frame, excluding knuckle joint, including cam and crank:		
	Single action:		
3335133021	Single point	8462.99.0060	8462.99.8060
	Two point:		
3335133028	150 tons and under		
3335133033	Over 150 tons		
3335133036	Automatic presses, strip or coil field		
3335133041	Other mechanical presses, including end wheel type bulldozer, double and triple action, and transfer fed presses, four point and knuckle joint, excluding automated lines of standard equipment		
	Hydraulic presses (metalworking only)		
	Vertical single action, all tonnages		
3335133046	Housing or straight side type		
3335133051	Column type (open rod)		
	Gap or C-frame:		
3335133056	15 tons and under	8462.91.0060	8462.91.4060
3335133061	16 tons to 35 tons	8462.91.0090	8462.91.8090
3335133066	Over 35 tons		
3335133071	Other hydraulic and pneumatic presses, including horizontal		

Table 5. Comparison of the North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes, and HTSUSA Import Codes: 2004

Product code	Product description	Export code 1/	Import code 2/
3335135076	Forging machines, including forging presses and die stamping preses	8462.10.0030 8462.10.0035 8462.10.0055	8462.10.0030 8462.10.0035 8462.10.0055
3335135001	All other metal forming type machine tools: All other metal forming type machine tools valued under \$3,025 each	8463.20.0060 8463.90.0060	8463.20.0060 8463.90.0060
3335135016	Machines valued at \$3,025 each or more: Die casting machines all types	8454.30.0010	8454.30.0010
3335135006	Thread rolling machinery	8463.20.0080	8463.20.0080
3335135011	Metal container-making machinery		
3335135021	Riveting machines (except hand held portable types)	8463.90.0080	8463.90.0080
3335135026	All other metal forming type machine tools, n.e.c.		

n.e.c. Not elsewhere classified.

1/Source: 2004 edition, Harmonized System-Based Schedule B, Statistical Classification of Domestic and Foreign Commodities Exported from the United States.

2/Source: Harmonized Tariff Schedule of the United States, Annotated (2004).

Appendix.

General CIR Survey Information, Explanation of General Terms and Historical Note

GENERAL

The CIR program has been providing monthly, quarterly, and annual measures of industrial activity for many years. Since 1904, with its cotton and fats and oils surveys, the CIR program has formed an essential part of an integrated statistical system involving the quinquennial economic census, manufacturing sector, and the annual survey of manufactures. The CIR surveys, however, provide current statistics at a more detailed product level than either of the other two statistical programs.

The primary objective of the CIR program is to produce timely, accurate data on production and shipments of selected products. The data are used to satisfy economic policy needs and for market analysis, forecasting, and decision making in the private sector. The product-level data generated by these surveys are used extensively by individual firms, trade associations, and market analysts in planning or recommending marketing and legislative strategies, particularly if their industry is significantly affected by foreign trade. Although production and shipments information are the two most common data items collected, the CIR program collects other measures also such as inventories, orders, and consumption. These surveys measure manufacturing activity in important commodity areas such as textiles and apparel, chemicals, primary metals, computer and electronic components, industrial equipment, aerospace equipment, and consumer goods.

The CIR program uses a unified data collection, processing, and publication system. The U.S. Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic census, manufacturing sector. The manufacturing sector provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is too large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. The CIR program includes a group of mandatory and voluntary surveys. Typically the monthly and quarterly surveys are conducted on a voluntary basis. Those companies that choose not to respond to the voluntary surveys are required to submit a mandatory annual counterpart corresponding to the more frequent survey.

NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS), 1997

The adoption of the North American Industry Classification System (NAICS) in the 1997 Economic Census has had a major impact on the comparability of current and historic data. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those that left manufacturing are logging and portions of publishing. Prominent among the industries that came into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. The net effect of the classification changes are such that if the 1997 value of shipments data for all manufacturers were tabulated on an SIC basis, it would be approximately 3 percent higher.

Listed below are the NAICS sectors:

- 21 Mining
- 22 Utilities
- 23 Construction
- 31-33 Manufacturing
- 42 Wholesale Trade
- 44-45 Retail Trade
- 48-49 Transportation and Warehousing
- 51 Information
- 52 Finance and Insurance
- 53 Real Estate and Rental and Leasing
- 54 Professional, Scientific, and Technical Services
- 55 Management of Companies and Enterprises
- 56 Administrative and Support and Waste Management and Remediation Services
- 61 Educational Services
- 62 Health Care and Social Assistance
- 71 Arts, Entertainment, and Recreation
- 72 Accommodation and Food Services
- 81 Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

FUNDING

The Census Bureau funds most of the surveys. However, a number of surveys are paid for either fully or partially by other Federal Government agencies or private trade associations. A few surveys are mandated, but all are authorized by Title 13 of the United States Code.

RELIABILITY OF DATA

Survey error may result from several sources including the inability to obtain information about all cases in the survey, response errors, definitional difficulties, differences in the interpretation of questions, mistakes in recording or coding the reported data, and other errors of collection, response, coverage, and estimation. These nonsampling errors also occur in complete censuses. Although no direct measurement of the biases due to these nonsampling errors has been obtained, precautionary steps were taken in all phases of the collection, processing, and tabulation of the data in an effort to minimize their influence.

A major source of bias in the published estimates is the imputing of data for nonrespondents, for late reporters, and for data that fail logic edits. Missing figures are imputed based on period-to-period movements shown by reporting firms. A figure is considered to be an impute if the value was not directly reported on the questionnaire, directly derived from other reported items, directly available from supplemental sources, or obtained from the respondent during the analytical review phase. Imputation generally is limited to a maximum of 10 percent for any one data cell. Figures with imputation rates greater than 10 percent are suppressed or footnoted. The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual yearly movements for nonrespondents may or may not closely agree with the imputed movements. The range of difference between the actual and imputed figures is assumed to be small. The degree of uncertainty regarding the accuracy of the published data increases as the percentage of imputation increases. Figures with imputation rates above 10 percent should be used with caution.

DATA REVISIONS

Statistics for previous years may be revised as the result of corrected figures from respondents, late reports for which imputations were originally made, or other corrections. Data that have been revised by more than 5 percent from previously published data are indicated by footnotes.

DISCLOSURE

The Census Bureau collects the CIR data under the authority of Title 13, United States Code, which specifies that the information can only be used for statistical purposes and cannot be published or released in any manner that would identify a person, household, or establishment. "D" indicates that data in the cell have been suppressed to avoid disclosure of information pertaining to individual companies.

EXPLANATION OF GENERAL TERMS

Capacity. The maximum quantity of a product that can be produced in a plant in 1 day if operating for 24 hours. Includes the capacity of idle plants until the plant is reported to be destroyed, dismantled, or abandoned.

Consumption. Materials used in producing or processing a product or otherwise removing the product from the inventory.

Exports. Includes all types of products shipped to foreign countries, or to agents or exporters for reshipment to foreign countries.

Gross shipments. The quantity or value of physical shipments from domestic establishments of all products sold, transferred to other establishments of the same company, or shipped on consignment, whether for domestic or export sale or use. Shipments of products purchased for resale are omitted. Shipments of products made under toll arrangements are included.

Interplant transfers. Shipments to other domestic plants within a company for further assembly, fabrication, or manufacture.

Inventories. The quantity or value of finished goods, work in progress, and materials on hand.

Machinery in place. The number of machines of a particular type in place as of a particular date whether the machinery was used for production, prototype, or sampling, or was idle. Machinery in place includes all machinery set up in operating positions.

Net receipts. Derived by subtracting the materials held at the end of the previous month from the sum of materials used during the current month.

Production. The total volume of products produced, including: products sold; products transferred or added to inventory after adjustments for breakage, shrinkage, and obsolescence, plus any other inventory adjustment; and products that undergo further manufacture at the same establishment.

Quantities produced and consumed. Quantities of each type of product produced by a company for internal consumption within that same company.

Quantity and value of new orders. The sales value of orders received during the current reporting period for products and services to be delivered immediately or at some future date. Also represents the net sales value of contract change documents that increase or decrease the sales value of the orders to which they are related, when the parties concerned are in substantial agreement as to the amount involved. Included as orders are only those that are supported by binding legal documents such as signed contracts or letter contracts.

Quantity and value of shipments. The figures on quantity and value of shipments represent physical shipments of all products sold, transferred to other establishments of the same company, or shipped on consignment, whether for domestic or export sale. The value represents the net sales price, f.o.b. plant, to the customer or branch to which the products are shipped, net of discounts, allowances, freight charges, and

returns. Shipments to a company's own branches are assigned the same value as comparable appropriate allocation of company overhead and profit. Products bought and resold without further manufacture are excluded.

Stocks. Total quantity of ending finished inventory.

Unfilled orders (backlog). Calculated by adding net new orders and subtracting net sales from the backlog at the end of the preceding year.

HISTORICAL NOTE

Data on metalworking machinery have been collected by the Census Bureau since 1942. Historical data may be obtained from Current Industrial Reports (called Facts for Industry before 1959) available at your local Federal Depository Library.